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Knowledge and Attitude of Newly Graduated Doctors towards Soil Transmitted Helminthic Infections- Sudan-2017

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Abstract

Introduction: The main soil transmitted nematode species are Ascaris lumbricoides, Trichuris trichiura and the hookworms (Necator americanus and Ancylostoma duodenal). Medical students and residents interest in global health has been growing rapidly. Meanwhile, educational opportunities for trainees remain limited, and many trainees participate in global health experiences abroad without adequate preparation.

Research Methodology: This was institutional-based cross sectional study concerning knowledge and attitude of the soil transmitted helminthes among (218) newly graduated doctors with 100% response rate. The data were collected in December 2016 using standardized self-administered questionnaire composed 36 close-ended questions Data were analyzed using Statistical Package for Social Science (SPSS) version 20. Univariate analysis for all determinants, bivariate analysis was carried by cross tabulation.

Results: There were statistically significant differences between type of curriculum 51.8% traditional with the main intervention strategy to control the spread of the helminthes (P-value = 0.000). Also, significant difference (P-value = 0.000), between type of curriculum and drug of choice of an adult patient with Ascariasis. And type of curriculum with primary prevention for Ancylostoma duodenal significant different was (P-value = 0.000).

Conclusion: Participants from medical colleges in Sudan seems to be studied in theoretically 81.2%, and 51.8% of participants studying on traditional curriculum and the level of their knowledge regarding soil transmitted helminthes was negative in terms of treatment, prevention and control.

Keywords: Soil transmitted nematode species; Soil transmitted helminthes; Newly graduated doctors; Univariate analysis; Ascariasis

Abbreviations: STH: Soil Transmitted Helminthes; CPD: Continuous Professional Development Center; IDA: Iron Deficiency Anemia.

Introduction

Parasite helminthes (worms) that infect humans belong to two phyla, phylum Platyhelminthes (flat worms) and phylum nematode (round worms). The main soil transmitted nematode species are Ascaris lumbricoides, Trichuris trichiura and the hookworms (Necatoramericanus and Ancylostoma duodenal) [1,2].

In the vast majority of developing tropical and subtropical regions of the world, helminthes parasite infections, particularly those soil transmitted helminthes and schistosomes, constitute to be major public health and developmental challenges. They are associated with poverty and underdevelopment is most prevalent in the poorest communities of the developing world [3].

Intestinal helminthic infections often lead to iron deficiency anemia (IDA), protein-energy malnutrition, stunting (a measure of chronic under nutrition), wasting (a measure of acute under nutrition), listlessness and abdominal pain and may negatively affect class-attentiveness of school children. The tropical climate and poor hygienic conditions under which the socio-economically deprived rural dwellers live facilitate the development and transmission of these helminthes infections [4,5].

The burden of these helminthes parasite infections has been consistently underestimated in the past, but there was now a general consensus that STH infections and schistosomiasis represent an important public health problem especially for children. Although light helminthic infections are often asymptomatic, the adverse health and nutritional impacts of severe worm infections on children. Without chemotherapeutic treatment, the infections may also have more serious medical consequences in a minority of cases: roundworm infections sometimes lead to fatal intestinal obstruction, hookworm infection can cause severe anemia, and whipworm is associated with chronic dysentery [6,7].

Research Methodology

This was institutional-based descriptive cross – sectional study design. Concerning knowledge and attitude of the soil transmitted helminthes among (218) newly graduated doctors with 100% response rate. The data were collected in December 2016.

Results

Characteristics		Frequency	Percentage
Gender	Male	46	21.1
	Female	172	78.9
	Total	218	100
Graduation date	2015	32	14.7
	2016	186	85.3
	Total	218	100
Duration of study	5 years	19	8.7
	6 years	197	90.4
	7 years	2	0.9
	Total	218	100
Type of curriculum	Traditional	113	51.8
	Innovative	21	9.6
	Hybrid	15	6.9
	I don't know	69	31.7
	Total	218	100
Country of graduation	Sudan	216	99.1
	Arabic	2	0.9
	Total	218	100

Table 1: Background characteristics of the study participants.

About 21.1% of the participants were males while 78.9%, of them were females with 1:4 males to females' ratio. 90.4% of the participants studied six years in their medical schools. 51.8% of the participants were graduated from medical schools adopting traditional curricula while 31.7% of them reported that they did not know the type of their curriculula. 99% of the participants were graduated from Sudan.

Type of curriculum			Intervention strategy to control the spread of the helminthes in a high-risk group				Total
			Child nutrition	Selective mass chemotherapy	Treatment for individual	I don't know.	
Traditional	Count	7	24	73	9	113	
	Expected Count	11.9	31.1	64.8	5.2	113	
Innovative	Count	5	11	4	1	21	
	Expected Count	2.2	5.8	12	1	21	
Hybrid	Count	1	9	5	0	15	
	Expected Count	1.6	4.1	8.6	0.7	15	
I don't know	Count	10	16	43	0	69	
	Expected Count	7.3	19	39.6	3.2	69	
Total		Count	23	60	125	10	218
		Expected Count	23	60	125	10	218

P value = 0.000

Type of curriculum versus main intervention strategy to control the spread of the helminthes in a high-risk group, yielded statistically significant difference.

Table 2: Type of curriculum versus intervention strategy to control the spread of the helminthes.

Type of curriculum			Drug of choice of an adult patient with Ascariasis				Total
			Levamisole 150mg tablets	Doxycycline capsules	Praziquantel tablets.	I don't know	
Traditional	Count	42	0	62	9	113	
	Expected Count	34.2	13	42.5	23.3	113	
Innovative	Count	3	3	13	2	21	
	Expected Count	6.4	2.4	7.9	4.3	21	
Hybrid	Count	12	0	3	0	15	
	Expected Count	4.5	1.7	5.6	3.1	15	
I don't know	Count	9	22	4	34	69	
	Expected Count	20.9	7.9	26	14.2	69	
Total		Count	66	25	82	45	218
		Expected Count	66	25	82	45	218

P value=0.00

Type of curriculum versus knowledge of participants about drug of choice of an adult patient with Ascariasis yielded statistically significant difference (P value=0.00).

Table 3: Type of curriculum versus knowledge of participants about drug of choice of an adult patient with Ascariasis.

Type of curriculum	Primary prevention for Ancylostoma doudenale	Total

			Shoes wearing	Avoiding of swimming in river	I don't know	
Traditional	Count	22	61	30	113	
	Expected Count	22.8	44.6	45.6	113	
Innovative	Count	10	2	9	21	
	Expected Count	4.2	8.3	8.5	21	
Hybrid	Count	6	3	6	15	
	Expected Count	3	5.9	6.1	15	
I don't know	Count	6	20	43	69	
	Expected Count	13.9	27.2	27.9	69	
Total		Count	44	86	88	218
		Expected Count	44	86	88	218

P value=0.00

The type of curriculum versus knowledge of the participants about primary prevention for Ancylostoma doudenale, yielded statistically significant difference (P value=0.00).

Table 4: Curriculum versus knowledge of participants about primary prevention for Ancylostoma doudenale.

Discussion

21.1% of the study participants were males, while 78.9%, of the participants were females with 1:4 male to female ratio. Sudan HRH Survey revealed that the percentage of the female among the total health workers is 51%. This could be a result of the increasing female Intake to the health training institutes, especially the medical and nursing schools [8].

Only37.6% of the study participants answered drug of choice of an adult patient with Ascariasis praziguntel tablet 600mg, and 30.3% of them answered as Levamisole 150mg tablet. There was statistically significant difference (P-value = 0.00), between type of curriculum and drug of choice for treatment of an adult patient with Ascariasis which indicates that curricula studied by the participants were traditional and mostly theoretical [9].

Only 40.8% of the study participants identified the primary prevention of ancylostomiasis as construction of pit latrines and 28% identified shoes wearing while 22.9% said avoiding of swimming in river. There was statistically significant difference (P-value = 0.000) between type of curriculum and participants' knowledge of primary prevention for ancylostomiasis. This may reflect the curricular variation in addressing the topic. Nevertheless, only 20.2% of the participants identified the primary prevention of ancylostomiasis as shoes wearing [10].

About 64.7% of the study participants identified health education as the main intervention to control the spread of helminthes in a community with high intensity of infection. About 57.5 of the study participants identified treatment of individual cases as the main intervention strategy that can be applied to control the spread of the helminthes in a high-risk group. There was statistically significant difference (P-value = 0.00) between the type of curriculum and drug the main intervention strategy that can be applied to control the spread of the helminthes in a high-risk group such as school age children. WHO has recommended three interventions measures to control morbidity due to STH infections. This includes regular drug treatment of high-risk groups for reduction of the worm burden over time, health education and sanitation supported by personal hygiene aimed at reducing soil contamination [11].

42.7% of the study participants studied about soil transmitted helminthes in the Parasitology, 38.1% studied in Epidemiology, and 18.3% studied in Community Medicine/Preventive Medicine. There was statistically significant difference (P-value = 0.000) between type of curriculum and subjects related to soil transmitted helminthes studied by the participants at under graduate level. The study indicates that soil transmitted helminthes is scattered between different subjects without integration and mostly at the pre-clinical level [12].

Conclusion

Participants from medical colleges in Sudan seems to be studied in theoretically 81.2%, and 51.8% of

participants studying on traditional curriculum and the level of their knowledge regarding soil transmitted helminthes was negative in terms of treatment, prevention and control.

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